

**GOOSE CREEK
WBID 2201**

Recreational Use Attainability Analysis

May 2007

PREPARED FOR:
RFP No: B3Z07134
Water Quality Monitoring & Assessment Section
Water Protection Program
Division of Environmental Quality
MISSOURI DEPARTMENT OF NATURAL RESOURCES
301 West High Street
Jefferson City, MO 65102

PREPARED BY:
MEC WATER RESOURCES, INC.
1123 Wilkes Blvd., Ste. 400
Columbia, MO 65201

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet A - Water Body Identification

I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad):	Goose Creek
Missouri Water Body Identification (WBID) Number:	2201
8-digit HUC:	07140107 - Whitewater
County:	Cape Girardeau
Upstream Legal Description (from Table H):	6, 31N, 13W
Downstream Legal Description (from Table H):	Mouth
Number of sites evaluated	3
List all sites numbers, listed consequently upstream to downstream:	Sites - 1, 2, 3

II. Subsegmentation (fill this section out only in cases where subsegmentation is being proposed)

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Upstream Coordinates:		Downstream Coordinates:	
UTM X	Y	UTM X	Y
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± _____ Feet or ± _____ Meters		
PDOP		± _____ Feet or ± _____ Meters	

III. Discharger Facility Information (list all permitted dischargers on the stream)

Discharger Facility Name(s):	Jackson Municipal WWTP Clover Hill Trailer Park
Discharger Permit Number(s):	MO 0022853 MO 0091021

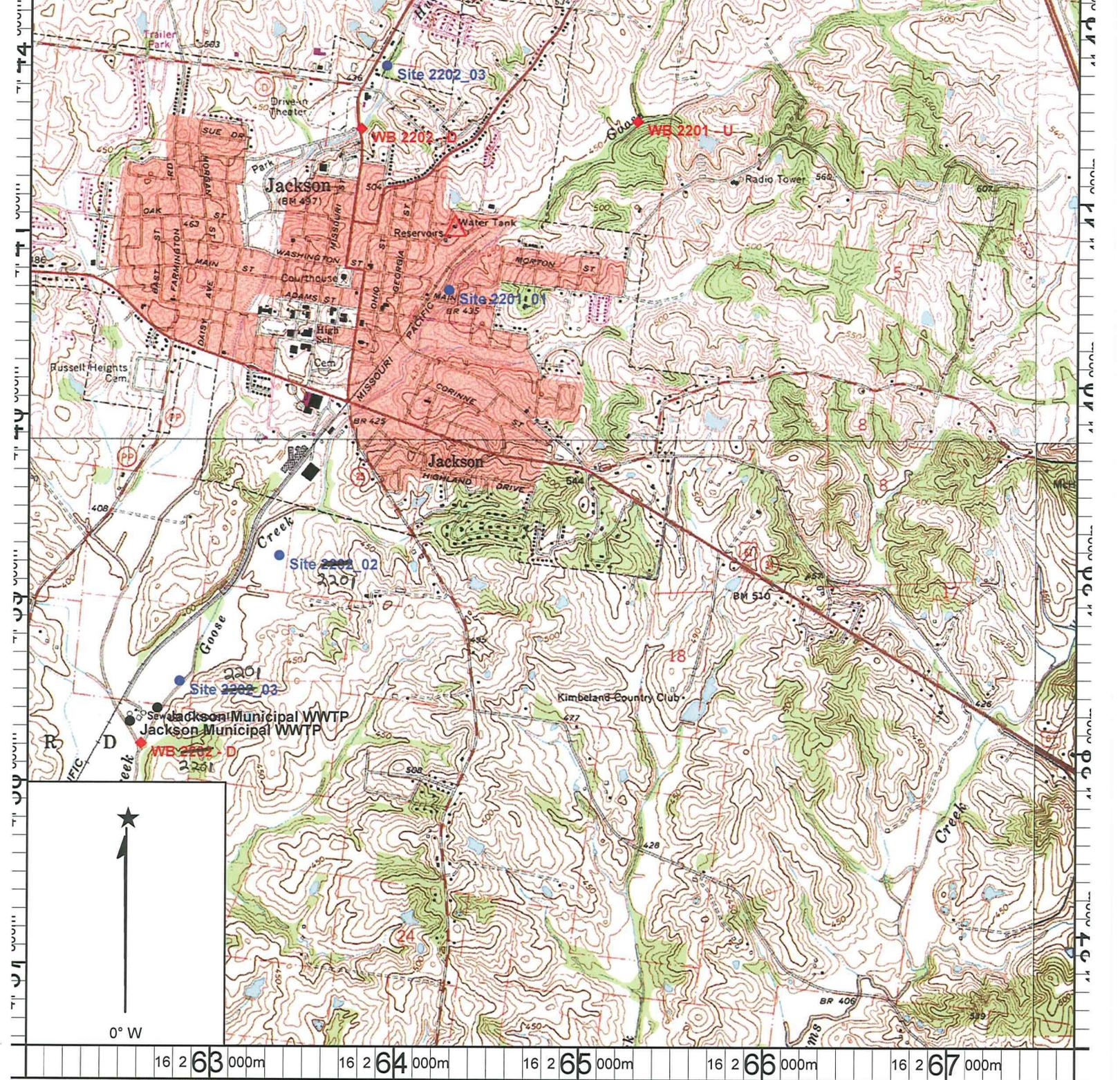
IV. UAA Surveyor (please print legibly)

Name of Surveyor	Robert R. Bacon	Telephone Number:	(573) 634-7078
Organization/Employer:	ERC		
Position:	Field Manager		

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Signed: Robert R. Bacon Date: 05-07-07

ARC 5-21-07
RK 5/21/07



Name: GORDONVILLE
Date: 5/22/2007
Scale: 1 inch equals 2353 feet

Location: 16 0264946 E 4139909 N

WBID# 2201
 Site# 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5-7-07</u>	Site Location Description (e.g., road crossing): <u>- downstream</u>
Personnel (Data Collectors): <u>Abby + Bob</u>	<u>bridge @ Main Street Jackson</u>
Current Weather Conditions: <u>sunny, rly cloudy</u>	Facility Name: <u>Clover Hill Trailer Park, Jackson Municipal WWTP</u>
Weather Conditions for Past 10 days: <u>Temp 78°</u>	Permit Number: <u>MO 0051021 MO0022853</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>16 S 0264394</u>		Y: <u>4140617</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>28</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# #)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# #)	Photo Purpose and Direction (upstream, downstream, other)
<u>A8</u>	<u>Upstream</u> <u>T1</u>	<u>A7</u>	<u>Downstream</u> <u>T11</u>

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input checked="" type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

WBID# 2201
Site# 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization
(must be completed for each site)

Indications of Human Use*: (attach photos)

<input checked="" type="checkbox"/> Roads ^{OVER}	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments:					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No
If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate*: (These values should add up to 100%.)

% Cobble	<u>50</u>	% Gravel		% Sand		% Silt		% Mud/Clay	<u>50</u>	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

filamentous algae

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>turbid (lightly)</u>
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: [Signature] Date of Survey: 5/7/07
Organization: ERC Position: field crew

045 5-21-07
AK 5/24/07

ERC Recreational Use Attainability Analysis Field Survey Sheet

CD-A 008 - up (61-11)
007 - Down (101-01)

Water Quality Parameters

Waterbody ID: 2201 Site #: 01
 Weather Conditions: Sunny + partly cloudy 78°
 GPS Location:
 UTM X: 16S 0264394 UTM Y: 4140617
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 28 (feet)
 Average Stream Width: 6 (meters) Length of Survey Segment: 150 (meters)
 Field Staff: Abley + Bob

Dissolved Oxygen: 10.25 (mg/L)
 Dissolved Oxygen: 122.90 (% sat)
 Specific Cond: .440 (µS/cm)
 Water Temperature: 24.51 (°C)
 Time: 14:05:13

way pt #4

6 x 20 = 120

150/10 = 15m

Transect Cross-Section

	01		02		03		04		05		06		07		08		09		10		11		
	Distance (m)	Depth (m)																					
1	0	.01	0	.01	0	.03	0	.08	0	.08	0	.01	0	.01	0	.01	0	.01	0	.01	0	.01	0
2	.573	.04	.755	.17	.6	.19	.67	.09	.806	.26	.64	.19	.645	.16	.63	.36	.65	.29	.56	.35	.62	.22	
3	1.146	.04	1.51	.18	1.2	.17	1.34	.17	1.612	.24	1.28	.26	1.29	.18	1.26	.45	1.3	.64	1.12	.37	1.24	.42	
4	1.719	.08	2.265	.04	1.8	.13	2.01	.14	2.418	.18	1.92	.26	1.935	.25	1.89	.57	1.95	.64	1.68	.38	1.86	.46	
5	2.292	.13	3.02	.02	2.4	.12	2.68	.08	3.224	.13	2.56	.35	2.58	.32	2.52	.60	2.6	.61	2.24	.35	2.48	.41	
6	2.865	.23	3.75	0	3	.14	3.35	.06	4.03	.05	3.2	.33	3.22	.30	3.15	.54	3.25	.42	2.8	.24	3.1	.40	
7	3.438	.24	4.53	.02	3.6	.13	4.02	.02	4.836	.03	3.84	.34	3.87	.32	3.78	.41	3.9	.34	3.36	.24	3.72	.44	
8	4.011	.17	5.285	.01	4.2	.15	4.69	.02	5.642	.07	4.48	.07	4.515	.29	4.41	.44	4.55	.26	3.98	.17	4.34	.42	
9	4.58	.11	6.04	.01	4.8	.12	5.36	.03	6.448	.13	5.12	.09	5.16	.27	5.04	.34	5.2	.14	4.48	.13	4.96	.40	
10	5.157	.10	6.75	.03	5.4	.04	6.03	.02	7.254	.05	5.76	.08	5.805	.14	5.67	.23	5.85	.07	5.04	.07	5.58	.27	
11	5.73	.01	7.55	.01	6.0	.01	6.70	.01	8.06	.04	6.4	.01	6.45	.01	6.3	.01	6.5	.01	5.6	.01	6.2	.01	
12	5.74	0	7.56	0	6.10	0	7.20	0	8.3	0	6.41	0	6.46	0	6.45	0	6.8	0	6.45	0	6.3	0	
Feature Type	run		riffle		run		run		run		run		pool		pool		pool		riffle		run		

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Signed: [Signature] Date: 5/7/07
 MNC 5-21-07

AK 5/24/07

WBID# 2201
 Site# 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>15:25 5-7-07</u>	Site Location Description (e.g., road crossing): <u>@ W Jackson TR - downstream</u>
Personnel (Data Collectors): <u>Ahly & Bob</u>	
Current Weather Conditions: <u>Sunny & pthly cloudy - 84°</u>	Facility Name: <u>Clover Hill Trailer Park, Jackson Municipal WWT P</u> Permit Number: <u>MO 0051021 MO 0022853</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>16 S 0263442</u>		Y: <u>4139191</u>	
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>23</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# ##)	Photo Purpose and Direction (upstream, downstream, other)
<u>A10</u>	<u>Upstream</u> <u>T11</u>	<u>A9</u>	<u>Downstream</u> <u>T1</u>

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input checked="" type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments: Industrial area - heavily wooded riparian area

WBID# 2201
 Site# 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization
 (must be completed for each site)

Indications of Human Use*: (attach photos)

<input checked="" type="checkbox"/> Roads ^{over}	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments:					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No
 If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate*: (These values should add up to 100%.)

<u>50</u> % Cobble	<u>50</u> % Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Periphyton growth on rocks - some filamentous algae

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>lightly turbid</u>
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Bundharford for Bot Bacon Date of Survey: 5-7-07

Organization: ERC Position: Field Manager

ARC 5-22-07
AK 5/24/07

CDA Pcs -010 up (02-11)
009 Down (02-07)

ERC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 2201 Site #: 02

Weather Conditions: sunny w/ cloud cover 82° Waypoint 005

GPS Location:
 UTM X: 16 S 0263442 UTM Y: 4129191
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 23 (feet)

Average Stream Width: 7.25 (meters) Length of Survey Segment: 150 (meters)

Field Staff: Ashley + Bob

Water Quality Parameters	
Dissolved Oxygen:	<u>9.48</u> (mg/L)
Dissolved Oxygen:	<u>115.5</u> (% sat)
Specific Cond:	<u>.474</u> (µS/cm)
Water Temperature:	<u>25.2</u> (°C)
Time:	<u>15:30:52</u>

Transect Cross-Section

	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)																				
1	0	.01	0	.01	0	.01	0	.02	0	.01	0	.01	0	.01	0	.01	0	.09	0	.04	0	.01
2	.865	.08	.875	.06	.605	.07	.4	.05	.315	.21	.630	.23	.65	.08	.542	.08	.576	.18	.665	.32	.735	.13
3	1.73	.21	1.75	0	1.21	.15	.8	.06	.63	.21	1.26	.26	1.3	.08	1.082	.08	1.152	.26	1.23	.34	1.47	.07
4	2.595	.43	2.625	0	1.815	.21	1.2	.09	.945	.18	1.89	.30	1.95	.12	1.646	.08	1.728	.27	1.845	.29	2.205	.12
5	3.46	.55	3.5	0	2.42	.24	1.6	.12	1.26	.22	2.52	.30	2.6	.13	2.168	.10	2.304	.27	2.46	.24	2.94	.13
6	4.325	.52	4.375	0	3.025	.21	2.0	.08	1.575	.26	3.15	.33	3.25	.19	2.71	.11	2.88	.27	3.075	.24	3.675	.14
7	5.19	.50	5.25	0	3.63	.22	2.4	.09	1.89	.26	3.78	.35	3.9	.18	3.252	.12	3.456	.25	3.69	.23	4.41	.16
8	6.055	.45	6.125	.01	4.235	.22	2.8	.08	2.205	.30	4.41	.34	4.55	.16	3.774	.09	4.032	.25	4.305	.20	5.145	.17
9	6.92	.40	7	.18	4.84	.21	3.2	.03	2.52	.32	5.04	.24	5.2	.15	4.336	.11	4.608	.24	4.92	.20	5.88	.15
10	7.785	.30	7.825	.35	5.445	.19	3.6	.01	2.835	.17	5.67	.21	5.85	.23	4.878	.10	5.184	.27	5.535	.16	6.665	.09
11	8.65	.01	8.75	.01	6.05	.13	4.0	.01	3.15	.01	6.3	.03	6.5	.07	5.42	.01	5.76	.02	6.15	.15	7.35	.03
12	8.7	0	8.76	0	6.06	0	5.2	0	3.2	0	6.35	0	6.55	0	5.5	0	5.77	0	6.2	0	7.4	0
Feature Type (riffle, run, or pool)	pool		riffle		run		riffle		riffle		run		run		riffle		run		run		run	

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Signed: [Signature] Date: 05/07/07
CRK 5/24/07 5-21-07

WBID# 2201
 Site# 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Date & Time: <u>5-7-07 16:40</u>	Site Location Description (e.g., road crossing): <u>Small gravel road N of WWTP</u>
Personnel (Data Collectors): <u>Abby + Bob</u>	Facility Name: <u>Jackson Municipal WWTP, Clover Hill Trailer Park</u>
Current Weather Conditions: <u>Sunny; pty cloudy 85°</u>	Permit Number: <u>MO002893 MO0051021</u>
Weather Conditions for Past 10 days:	
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Locations:

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Site GPS Coordinates: UTM X: <u>16 S 0262885</u> Y: <u>4138517</u>			
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± <u>20</u> Feet or ± _____ Meters	± _____ Feet or ± _____ Meters	
PDOP			

Photos:

Photo ID# (WBID Site# #)	Photo Purpose and Direction (upstream, downstream, other)	Photo ID# (WBID Site# #)	Photo Purpose and Direction (upstream, downstream, other)
<u>A12</u>	<u>Upstream T11</u>	<u>A11</u>	<u>Downstream T11</u>
		<u>A13</u>	<u>Jackson WWTP outflow pipe</u>

Uses Observed*: (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use Data Sheet D- Recreational Use Interview when conducting interviews.)				

Surrounding Conditions*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input checked="" type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments: <u>Industrial</u>				

WBID# 2201
 Site# 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization

(must be completed for each site)

Indications of Human Use*: (attach photos)

<input checked="" type="checkbox"/> Roads ^{OVER}	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments:					

Stream Morphology:

Upstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Transect (#)	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE						
RUN						
POOL						

Downstream View's Physical Descriptions: Is there any water present at this view? Yes No

If so, is there an obvious current? Yes No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate*: (These values should add up to 100%.)

<u>20</u> % Cobble	<u>80</u> % Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
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Aquatic Vegetation*: (Note amount of vegetation or algal growth at the assessment site.)

Periphyton

Water Characteristics*: (Mark all that apply.)

ODOR:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
COLOR:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: <u>lightly turbid</u>
BOTTOM DEPOSIT:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
WATER SURFACE DEPOSITION:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments to this form.

*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that affect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Robert D. Bacon Date of Survey: 5-7-07

Organization: ERC Position: Field Manager

ERC 5-21-07
AK 5/24/07

CDA Pics 012 - Up @ (03-11)
013 @ Jackson Outflow

ERC Recreational Use Attainability Analysis Field Survey Sheet

Waterbody ID: 2201 Site #: 03

Weather Conditions: sunny - few clouds 83° way P+ #006

GPS Location:
 UTM X: 16S0262885 UTM Y: 4138517
 Horizontal Accuracy Estimate (GPS Data Quality): +/- 20 (feet)

Average Stream Width: 8 (meters) Length of Survey Segment: 160 (meters)

Field Staff: Alby + Bob

Water Quality Parameters	
Dissolved Oxygen:	<u>9.12</u> (mg/L)
Dissolved Oxygen:	<u>112.2</u> (% sat)
Specific Cond:	<u>1470</u> (µS/cm)
Water Temperature:	<u>25.86</u> (°C)
Time:	<u>16:45:03</u>

Transect Cross-Section

	01		02		03		04		05		06		07		08		09		10		11			
	Distance (m)	Depth (m)																						
1	0	.19	0	.01	0	.01	0	.01	0	.01	0	.01	0	.01	0	.01	0	.01	0	.01	0	.01	0	.01
2	.356	.35	.707	.01	.554	.03	.615	.14	.690	.08	.68	.13	.51	.03	.475	.04	.709	.04	.348	.04	.46	.05		
3	.712	.38	1.414	.01	1.108	.08	1.23	.17	1.38	.09	1.36	.16	1.02	.07	.95	.06	1.38	.12	.696	.08	.92	.03		
4	1.068	.38	2.121	.03	1.662	.10	1.845	.17	2.07	.08	2.04	.17	1.53	.08	1.425	.04	2.07	.22	1.044	.09	1.38	.07		
5	1.424	.35	2.828	.03	2.216	.10	2.46	.17	2.76	.08	2.72	.12	2.04	.10	1.9	.05	2.76	.36	1.392	.15	1.84	.09		
6	1.78	.32	3.535	.04	2.77	.10	3.075	.12	3.45	.09	3.4	.09	2.55	.12	2.375	.07	3.45	.46	1.74	.19	2.3	.14		
7	2.136	.27	4.242	.03	3.324	.10	3.69	.09	4.14	.07	4.08	.05	3.06	.11	2.85	.13	4.14	.56	2.088	.25	2.76	.11		
8	2.492	.19	4.949	.08	3.878	.10	4.305	.08	4.83	.09	4.76	.07	3.57	.12	3.325	.16	4.83	.58	2.436	.37	3.22	.03		
9	2.848	.17	5.656	.14	4.432	.10	4.92	.06	5.52	.07	5.44	0	4.08	.13	3.8	.23	5.52	.39	2.784	.38	3.68	.13		
10	3.204	.08	6.363	.14	4.986	.07	5.535	.04	6.21	.06	6.12	.01	4.59	.19	4.275	.27	6.21	.18	3.132	.29	4.14	.15		
11	3.56	.01	7.07	.02	5.54	.03	6.15	.01	6.9	.01	6.8	.03	5.1	.02	4.75	.06	6.9	.01	3.48	.03	4.60	.01		
12	3.70	0	7.20	0	5.55	0	6.2	0	7.3	0	6.81	0	5.15	0	4.76	0	6.95	0	3.49	0	4.62	0		
Feature Type	run		riffle		run		riffle		run		run		riffle		run		run		run		riffle			

Notes: Transects will be measured beginning on left descending bank and finishing on right descending bank.
 GPS location corresponds to Transect 01. Transects ordered in upstream to downstream order.

Signed: Alby + Bob Date: 05/07/07
5/24/07 5-21-07

WBID# 2201



Site# 1 Photo ID# A8, Upstream T1



Site# 1 Photo ID# A7, Downstream T11



Site# 2 Photo ID# A10, Upstream T11



Site# 2 Photo ID# A9, Downstream T1

WBID# 2201



Site# 13 Photo ID# A12, Upstream T11



Site# 3 Photo ID# A11, Downstream T11



Site# 3 Photo ID# A13, Jackson WWTP outflow pipe